Perspectives of Internal Medicine in IT Era

Yuan-Teh Lee

Information technology(IT) is one of the most powerful driving forces for changes in the world. Without doubt, it has transformed many aspects of human's life. However, its impact on medicine has been modest so far. Bio-IT has been extensively used in medical research and education and will also be widely applied for patients' benefit.

Proteomics and genomics are showing exciting progress in various aspects of modern-day internal medicine, particularly cancer research. New proteomic and genomic cancer diagnostics, which may be available in the near future, could detect cancers when they are still clinically occult, and make treatment more focused, leading to higher survival rates and less harm. Moreover, proteomics and genomics also show great promise for earlier detection and more effective treatment in cardiovascular diseases, diabetes, and neurological diseases. All clinicians in their respective disciplines have acknowledged IT has modified the usual illness patterns and changed the natural history of many diseases. It has improved both the quality and quantity of healthcare. Modern-day medicine will facilitate many people to enjoy their lives, live longer, suffer less, and die without fears.

In the early days of computing, emphasis was placed on pure processing power for mathematical and statistical purposes, and its impact on medicine was minimal at that time. Because physicians get used to the logical thinking, medicine hence became fertile ground for computer development, and the concepts of expert systems in medicine emerged, so did the systems for computer-aided history-taking and diagnosis. In the long run, the modern IT applications, such as patient administration and acquisition, storage and transmission of medical data, will surely penetrate the everyday clinicians' practice, and even the healthcare management. In the next decades we can expect more sophisticated human-computer interfaces with efficient voice and handwriting recognition, the penetration of techniques such as tele-surgery into mainstream of clinical practice, sophisticated undergraduate and postgraduate IT-based training, and better integrated and portable electronic health records. Many IT professionals can find the way to contribute to bio-IT. In fact, the limiting factor is rarely a particular skill, but rather the willingness to master an exciting and fast-moving discipline.

Medicine in the future will change vastly. Physicians have to join with other physicians and paramedical personnel as a team to manage their patients. They will treat their patients individually rather than treat them in each subspecialty. The majority of their patients will be managed in nursing home or at home rather than in hospital. Doctors will look after sick peoples in the community and will function to help "healthy" peoples to prevent the occurrence of a disease and to attenuate or even to eradicate the risk factors. Clinicians will be trained in multi-disciplines different from what

we have had only subspecialty now. Even more, internists will conduct not only the traditional practice, but will help their patients by undertaking more sophisticate operation procedures. The boundary between internist and other medical professions will become ambiguous.

It will not happen for doctors used to be living in a stable environment and to be long for no change. Changes make the differences between today and tomorrow. In general, better changes often follow people sufferings, if there are, usually come after poor adaptation. Looking to the future do much better than those looking only the past. Peoples often erroneously overestimate the influence of short-term changes and underestimate the effect of long-term changes. Try to accommodate the new circumstance is the only way we have to go for the medicine in IT era.